

Claims

- [c1] A method of prioritizing communication among wireless network stations in a network, said method comprising:
including at least one wireless network station in a priority group;
using said priority group to identify stations for prioritized communications;
and
excluding stations not included in said priority group.
- [c2] The method of claim 1 wherein said priority group is a priority polling list.
- [c3] The method of claim 2 wherein said priority polling list is a subset of a wireless network polling list.
- [c4] The method of claim 3 wherein said priority polling list is ordered in a sequential priority order different from a sequential order of said wireless network polling list.
- [c5] The method of claim 1 wherein said prioritized communications provide multi-level priority to stations within said priority group.
- [c6] The method of claim 5 wherein said multi-level priority is achieved by repetitive listing of a station in said priority group.
- [c7] The method of claim 1 wherein prioritized communications comprise providing priority access to transmission opportunities.
- [c8] The method of claim 1 wherein inclusion in said priority group is based on station device type.
- [c9] The method of claim 1 wherein inclusion in said priority group is based on transmission type.
- [c10] The method of claim 1 wherein stations with devices that have high bandwidth requirements are automatically placed in said priority group.
- [c11] The method of claim 7 wherein said priority access to transmission opportunities comprises an adjustment in the quantity of transmission

opportunities to account for bandwidth variation due to frame size differences.

- [c12] The method of claim 1 wherein said prioritized communications comprise providing priority based substantially on bandwidth parameters.
- [c13] The method of claim 1 wherein said wireless network complies with the ANSI/IEEE 802.11 Standard.
- [c14] The method of claim 1 wherein said wireless network comprises a protocol providing an intermittent contention free period during which said prioritized communications take place.
- [c15] A method of providing Quality of Service (QoS) prioritization for wireless network stations in a network, said method comprising:
establishing a priority polling list comprising an identifier for a first wireless network station for which communication priority is desired;
polling said priority polling list to determine whether said first wireless network station identified on said priority polling list is ready to communicate on said network; and
granting priority access to communicate over said network to said first station, wherein said priority access gives said first station priority over another network station excluded from said priority polling list.
- [c16] The method of claim 15 further comprising a scheduler wherein said scheduler receives priority requests from stations and adds stations to said priority polling list upon request.
- [c17] The method of claim 15 further comprising a scheduler wherein said scheduler monitors bandwidth availability; when bandwidth is available, said scheduler sends a priority change notice to a station to indicate bandwidth is available and, upon acknowledgement from said station, increases a priority level of said station to provide higher bandwidth to said station.
- [c18] A method of providing Quality of Service (QoS) prioritization for at least one wireless network station in a network, said method comprising:
providing a coordination function that controls access to a network

comprising wireless network stations, said controlled access occurring during a contention-free period;
providing a polling list comprising identifiers for a first group of wireless network stations in said network;
providing a priority polling list comprising identifiers for a second group of wireless network stations in said network, said second group consisting of stations for which communication priority is desired;
polling stations with identifiers included in said priority polling list to determine whether said stations in said second group have information to communicate; and
granting network communication access, through said coordination function, to stations within said second group that have information to communicate.

- [c19] The method of claim 18 wherein said coordination function is a Point Coordination Function (PCF).
- [c20] The method of claim 18 wherein said coordination function controls access only during an intermittent contention-free period.
- [c21] The method of claim 18 wherein stations on said polling list but normally excluded from said priority polling list are intermittently rotated into said priority polling list to prevent starvation.
- [c22] The method of claim 18 wherein a multi-level priority hierarchy is established among stations within said priority polling list thereby granting more frequent access to higher priority stations.
- [c23] A method of providing Quality of Service (QoS) prioritization for at least one wireless network station in a network, said method comprising:
providing a coordination function that controls access to a network comprising wireless network stations;
designating multiple priority levels for stations within a group of wireless network stations in said network for which communication priority is desired;

providing a multi-level priority polling list comprising identifiers for said group of wireless network stations in said network for which communication priority is desired, wherein stations are ranked with differing priority levels and higher priority stations are designated by listing their station identifier a higher number of times; polling stations with identifiers included in said priority polling list to determine whether said stations in said second group have information to communicate; and granting network communication access, through said coordination function, to stations within said second group that have information to communicate; measuring characteristics of packets transmitted by a station to determine station bandwidth; and adjusting the number of occurrences of a station identifier in said priority polling list so that higher priority stations have higher bandwidth.

[c24]

An apparatus for providing Quality of Service (QoS) prioritization for wireless network stations in a network, said apparatus comprising:

- a priority polling list comprising an identifier for at least a first wireless network station for which communication priority is desired;
- a polling unit for polling stations on said priority polling list to determine whether said at least a first wireless network station identified on said priority polling list is ready to communicate on said network; and
- a coordination function for granting priority access to communicate over said network to said at least a first station, wherein said priority access gives said at least a first station priority over another network station excluded from said priority polling list.